



KEMENTERIAN
PENDIDIKAN
MALAYSIA

POLITEKNIK
MALAYSIA

JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	CARL TIRAC ANAK KELBIN
REGISTRATION NO.	050DT18F1077
PROGRAMME/ SECTION	DDT2A

COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS
COURSEWORK ASSESSMENT		TUTORIAL 2
SESSION		DECEMBER 2018
DURATION	60 MINS	CLO1 20 MARKS
		CLO2 15 E
		CLO3
		20 MARKS

EDWIN ANAK BANDANG
050DT18F1129

DDT2A

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

[4 marks]

CLO1, C2

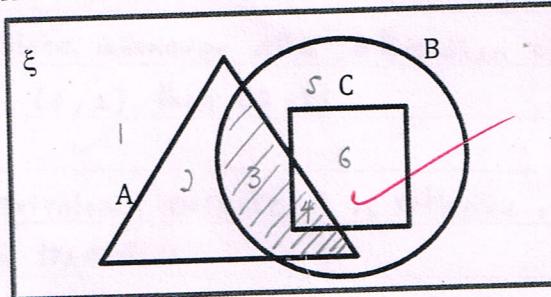
The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$

$$A = \{2, 3, 4\}$$

$$B = \{3, 4, 5, 6\}$$

$$A \cap B = \{3, 4\}$$



(b) The set $(A \cap B) \cup C'$

$$A = \{2, 3, 4\}$$

$$B = \{3, 4, 5, 6\}$$

$$C = \{4, 6\}$$

$$C' = \{1, 2, 3, 5\}$$

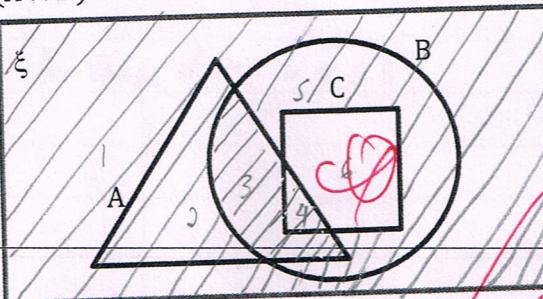
$$(A \cap B) \cup C' = \{3, 4, 1, 2, 5\}$$

Question 2

[6 marks]

CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?



Question 2

Set $\{(1,1), (1,2), (2,1), (2,2), (3,3), (4,4)\}$ on

Reflexive

~~It is reflexive since all the elements related to itself.~~

Symmetric

~~It is symmetric since whenever aRb then bRa~~
~~such as $(1,2)$ then $(2,1)$.~~

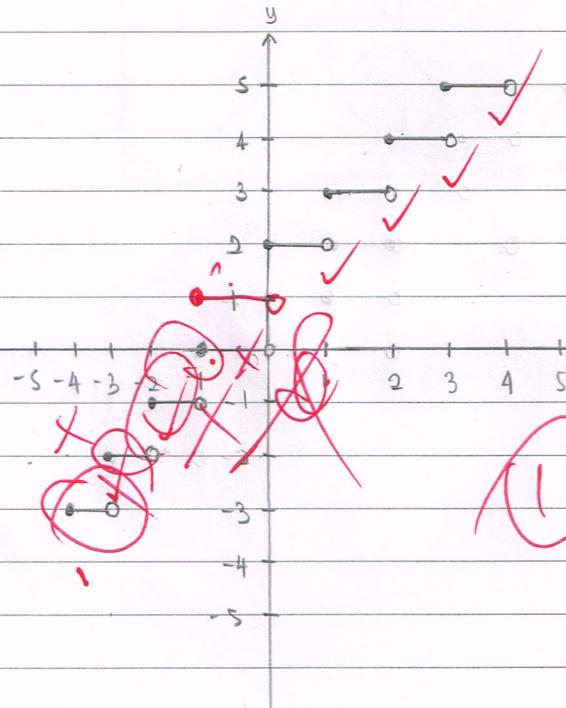
Transitive

~~It is transitive since whenever aRb , bRc then cRa , such as $(1, 1), (1, 2)$ then $(2, 1)$.~~

\therefore This set is equivalence because it is reflexive, symmetric and transitive.

Question 3

$$f(x) = \lfloor x + 2 \rfloor \quad \text{for range of } -5 \leq x \leq 5$$



1 - 5 + 2

$$\lfloor -3 \rfloor = -4$$

$$\lfloor -2 \rfloor = -3$$

$$[-3+2]$$

$$x \lfloor -2+2 \rfloor$$

10 + 2

$$\left[\begin{matrix} 1 & 2 \\ 1 & 2 \end{matrix} \right] = I$$

$$\lfloor 3 \rfloor = 2$$

$$\boxed{L+1 \rightarrow}$$

[3+2]

Question 4

$$\text{Let } f(x) = -3x + 7$$

$$g(x) = 2x^2 - 8$$

$$fg(x) = -3(2x^2 - 8) + 7$$

$$= -6x^2 + 24 + 7$$

$$= -6x^2 + 31$$

$$fg(-2) = -6x^2 + 31$$

$$= -6(-2)^2 + 31$$

$$= -24 + 31$$

$$= 7$$

(6)

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intervall

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svit 202

svit 203

svit 204

svit 205

svit 206

svit 207

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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	Marcello Anak Miga Mac Harry Anak Doren
REGISTRATION NO.	050DT18F1061, 050DT18F1006
PROGRAMME/ SECTION	DDT2A

COURSE CODE/ COURSE NAME		DBM2033 DISCRETE MATHEMATICS	
COURSEWORK ASSESSMENT		TUTORIAL 2	
SESSION		DECEMBER 2018	
DURATION	60 MINS	CLO1	20 MARKS
		CLO2	16+2
		CLO3	
		TOTAL MARKS	
		20 MARKS	

Well Done

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

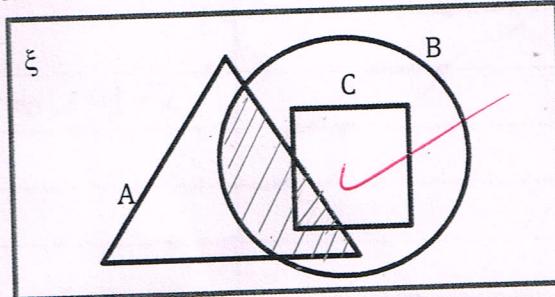
Question 1

[4 marks]

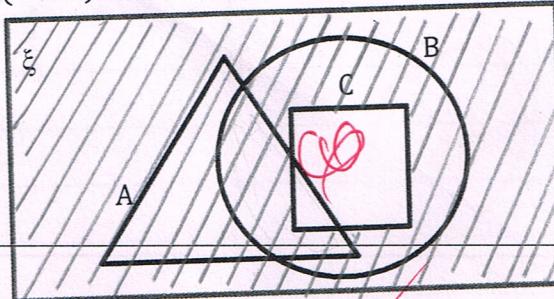
CLO1, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$



(b) The set $(A \cap B) \cup C'$



Question 2

[6 marks]

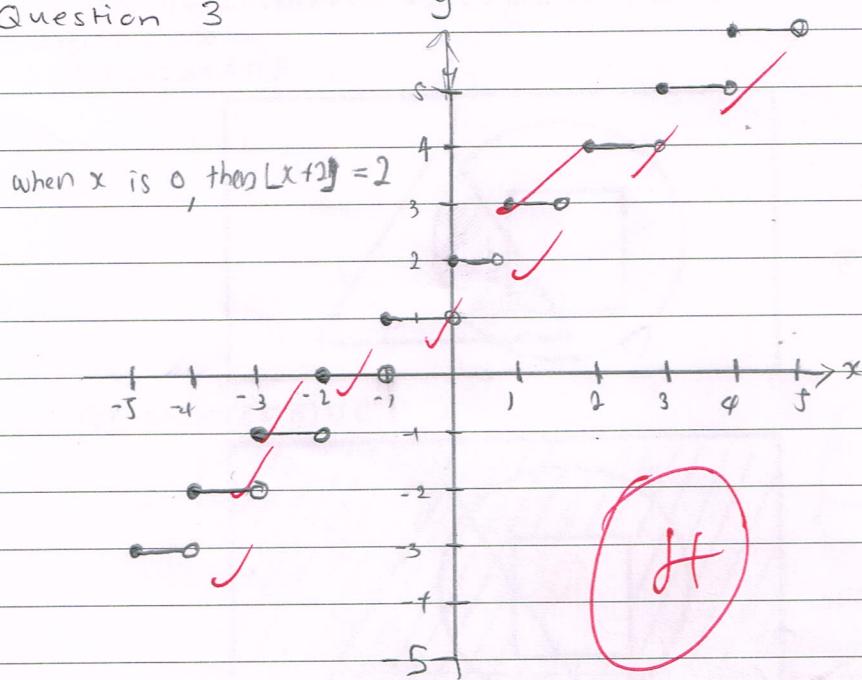
CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

Question 2

- $R = \{ (1,1), (2,2), (3,3), (4,4) \} \in R$ X
 - $R = \{ (1,2), (2,1) \} \notin R$ X
 - $R = \{ (1,2), (2,3), (1,3) \} \notin R$ X
 - = R is not equivalence relation because R is not transitive.
- (4)

Question 3



Question 4.

$$\begin{aligned}
 f \circ g(x) &= f[g(x)] \\
 &= f(2x^2 - 8) \\
 &= -3(2x^2 - 8) + 7 \\
 &= -6x^2 + 24 + 7 \\
 &= -6x^2 + 31
 \end{aligned}$$

$$\begin{aligned}
 fg(-2) &= -6x^2 + 31 \\
 &= -6(-2)^2 + 31 \\
 &= -6(4) + 31 \\
 &= -24 + 31 \\
 &= 7
 \end{aligned}$$

(b)



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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	muhamad Audi Bin Fasha
REGISTRATION NO.	05DDT18F1099
PROGRAMME/ SECTION	DDT2A

COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS		
COURSEWORK ASSESSMENT	TUTORIAL 2		
SESSION	DECEMBER 2018		
DURATION	60 MINS	CLO1	20 MARKS
		CLO2	100
		CLO3	100
		TOTAL MARKS	20 MARKS

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Viveiga 05DDT18F1130
Armann 05DDT18F1092

Good

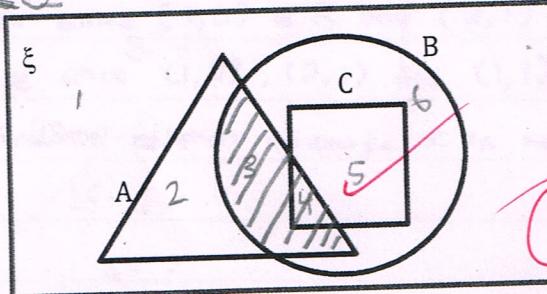
Question 1

[4 marks]

CLO1, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$

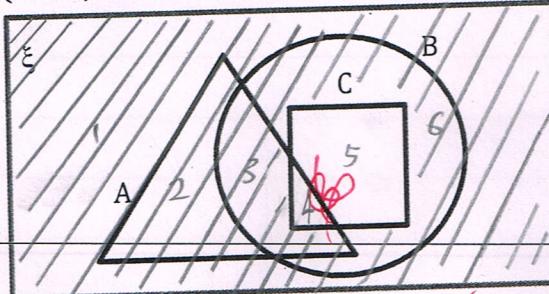


$$\begin{array}{l} A \\ \cap \\ 2, 3, 4 \end{array}$$

$$\begin{array}{l} B \\ \cap \\ 3, 4, 5, 6 \end{array}$$

②

(b) The set $(A \cap B) \cup C'$



$$\begin{array}{l} A \cap B \\ \cup \\ 3, 4 \end{array}$$

$$\begin{array}{l} C \\ \cup \\ 1, 2, 3, 6 \end{array}$$

$$= 1, 2, 3, 6$$

②

Question 2

[6 marks]

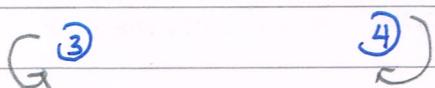
CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

Question 2

Relation = $\{(1,1), (1,2), (2,1), (2,2), (3,3), (4,4)\}$ = Boxed 4

on the set $\{1, 2, 3, 4\}$



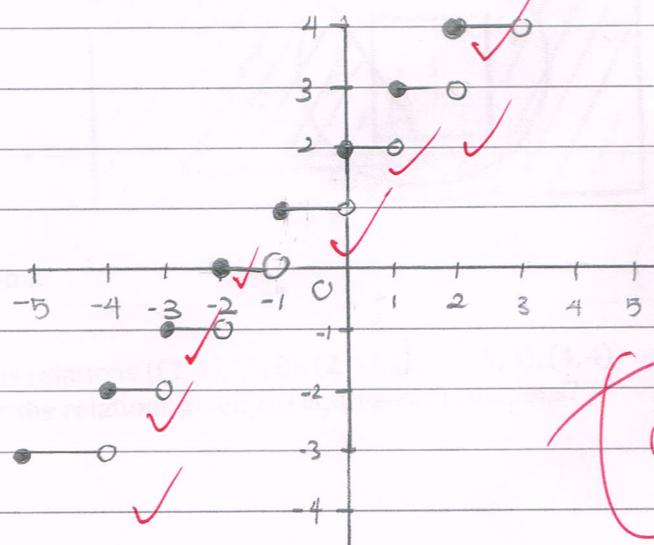
~~R is reflexive since all the elements loop to itself~~

~~R is symmetric since $(1,2) \in R$ and $(2,1) \in R$.~~

~~R is transitive since $(1,2)$, $(2,1)$ and $(1,1) \in R$~~

~~Thus R is equivalence relation because R is reflexive, symmetric and transitive.~~

(b)

Question 3

(H)

$$f(x) = \lfloor x+2 \rfloor$$

$$= \lfloor -5+2 \rfloor$$

$$= \lfloor -3 \rfloor$$

$$= -3$$

$$f(x) = \lfloor -x+2 \rfloor$$

$$= \lfloor -2+2 \rfloor$$

$$= -2$$

Question 4

$$\begin{aligned}
 f[g(x)] &= f(2x^2 - 8) \\
 &= -3(2x^2 - 8) + 7 \\
 &= -6x^2 + 24 + 7 \\
 f[g(x)] &= -6x^2 + 31
 \end{aligned}$$

$$\begin{aligned}
 f[g(-2)] &= -6(-2)^2 + 31 \\
 &= -24 + 31 \\
 &= 7
 \end{aligned}$$



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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	Bonyface	DURATION	COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS
REGISTRATION NO.	05PDT11P1031		COURSEWORK ASSESSMENT	TUTORIAL 2
PROGRAMME/ SECTION	PD14B		SESSION	DECEMBER 2018
			CLO1	20 MARKS
		60 MINS	CLO2	20 MARKS
			CLO3	20 MARKS

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

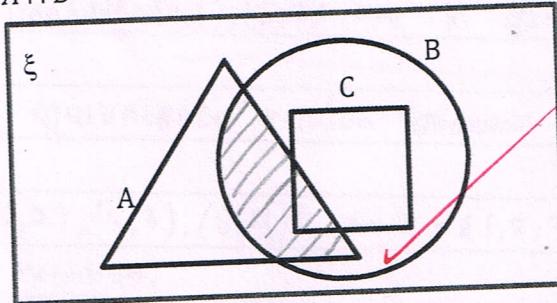
Question 1

[4 marks]

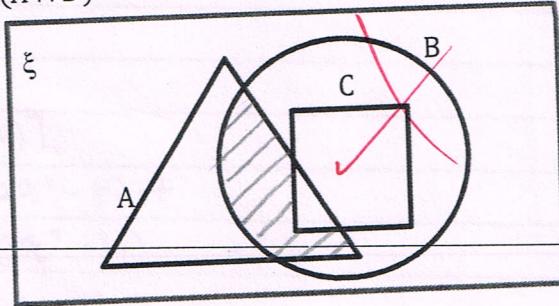
CLO1, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

- (a) The set $A \cap B$



- (b) The set $(A \cap B) \cup C'$

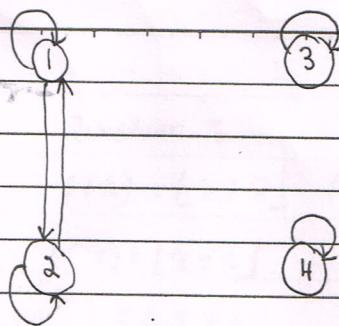


Question 2

[6 marks]

CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?



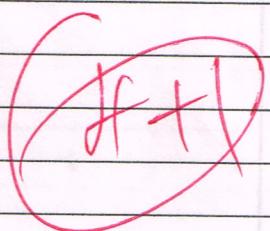
$(1,1), (2,2), (3,3), (4,4)$ is reflexive because
in question 2 is reflexive since all the element loop to itself.

$(1,2), (2,1)$ in question 2 is symmetric and not asymmetric.
 $(1,2), (2,1)$ is transitive $(1,1), (2,2)$ are in question. So?

Question 2 is equivalence relation because

$R \{(1,1), (1,2), (2,1), (2,2), (3,3), (4,4)\}$ on $x = \{1, 2, 3, 4\}$
is equivalence relation.

why?



Question 4

$$\begin{aligned} (f \circ g)(x) &= f[g(x)] \\ &= -3(2x^2 - 8) + 7 \\ &= -6x^2 + 31 \end{aligned}$$

X

$$\begin{aligned} (g \circ f)(x) &= g[f(x)] \\ &= 2(-3x + 7) - 8 \\ &= -6x + 6 \end{aligned}$$

X

No.

DBM2033 DISCRETE
MATHEMATICS

Date _____

COURSE CODE/
COURSE NAMECOURSEWORK
ASSESSMENT

ASSESSMENT

TUTORIAL 2

DECEMBER 2019

CL01 20 MARKS

CL02

CL03

10 MARKS

TOTAL MARKS

Question 3

 $f(x) = \lfloor x+2 \rfloor$ for the range of $-5 \leq x \leq 5$.

$$f(x) = \lfloor x+2 \rfloor$$

$$f(n)$$

$$= 0.5 + 2$$

$$= 2$$

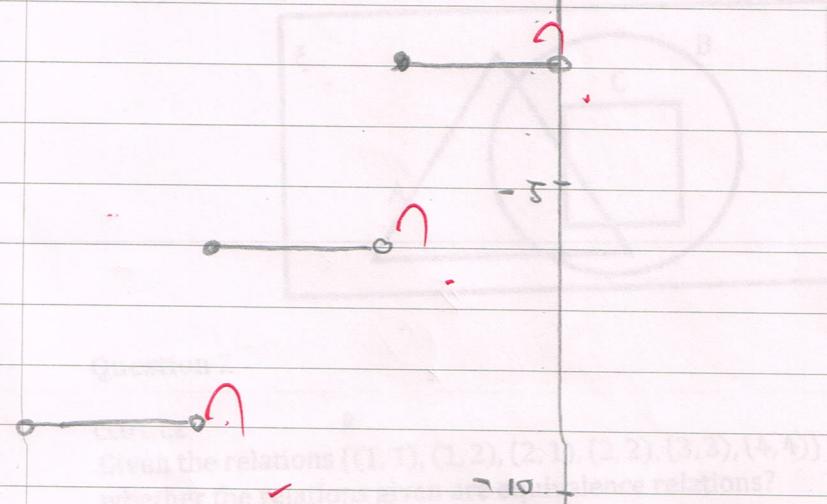
$$\lfloor 0.5 + 2 \rfloor$$

$$= 3$$

18

Answer All questions. Write your answers in the spaces provided.

You may use a non-programmable scientific calculator.

(a) The set $A \cap B$ (b) The set $(A \cap B) \cup C$ (c) The set $(A \cap B) \cup C$ Given the relations (1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4) on the set {1, 2, 3, 4}. Is the relation reflexive? Symmetric? Transitive? Answer by writing 'True' or 'False' in the boxes below. If the relation is not reflexive, state whether the relation is complete or incomplete."/>

Is the relation reflexive?

Is the relation symmetric?

Is the relation transitive?

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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	IVY CHELSEY , Shahirah
REGISTRATION NO.	05DDT18F1001 .05DDT18F1003
PROGRAMME/ SECTION	DDT2A

COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS	
COURSEWORK ASSESSMENT	TUTORIAL 2	
SESSION	DECEMBER 2018	
DURATION	60 MINS	20 MARKS
	CLO1	20 MARKS
	CLO2	2
	CLO3	2
	TOTAL MARKS	20 MARKS

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

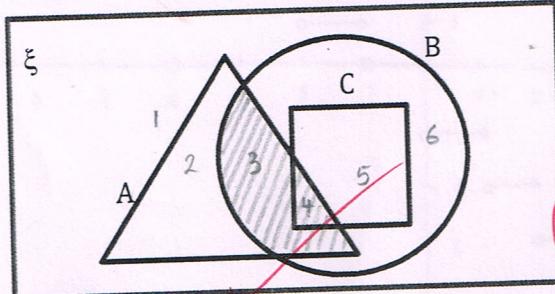
Question 1

[4 marks]

CLO1, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

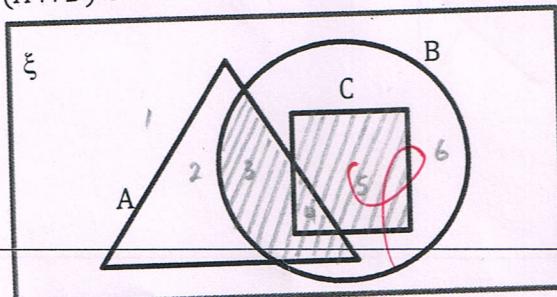
(a) The set $A \cap B$



$$\begin{aligned} A &= \{2, 3, 4\} \\ B &= \{8, 4, 5, 6\} \\ A \cap B &= \{3, 4\} \end{aligned}$$

2

(b) The set $(A \cap B) \cup C'$



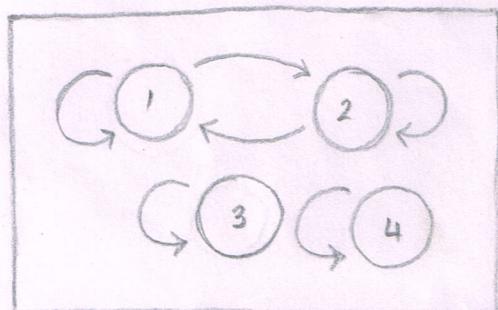
$$\begin{aligned} A &= \{2, 3, 4\} \\ B &= \{8, 4, 5, 6\} \\ C &= \{4, 5\} \\ C' &= \{1, 2, 3, 6\} \\ (A \cap B) &= \{3, 4\} \\ (A \cap B) \cup C' &= \{3, 4, 5\} \end{aligned}$$

Question 2

[6 marks]

CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?



R is said equivalence relation
because R is transitive
symmetric and reflexive.

is symmetric since $(1, 2) \in R$, $(2, 1) \in R$
Other properties is known since there
are $(1, 1), (2, 2), (3, 3), (4, 4)$

How you
found?

Question 3

[6 marks]

CL01, C2

Illustrate the graph for the function $f(x) = \lfloor x + 2 \rfloor$ for the range of $-5 \leq x \leq 5$.

Question 4

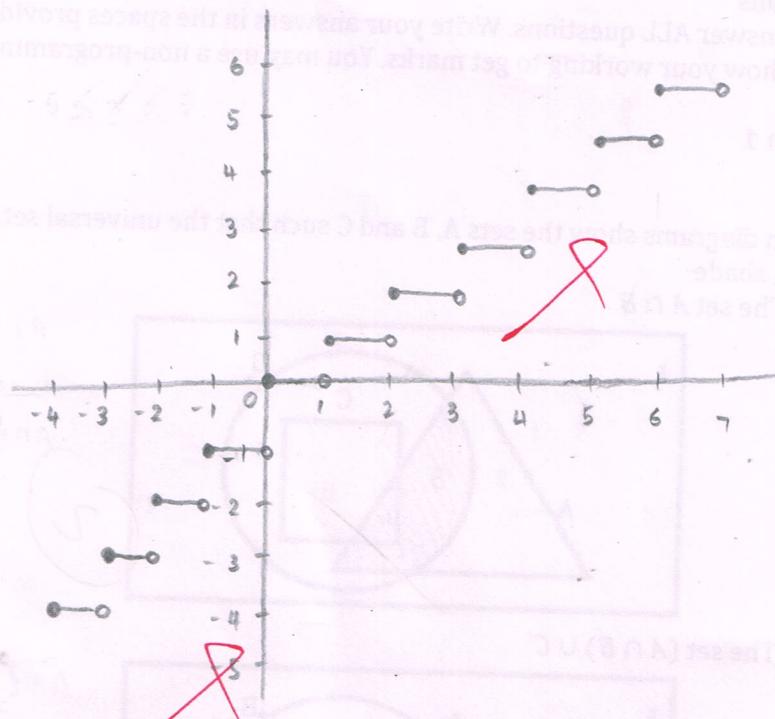
[6 marks]

CL01, C2

Let $f(x) = -3x + 7$ and $g(x) = 2x^2 - 8$. Compute $fg(-2)$

Question 3

$$f(x) = \lfloor x + 2 \rfloor, \text{ for } -5 \leq x \leq 5$$



Question 4

$$f(x) = -3x + 7$$

$$g(x) = 2x^2$$

$$\text{fog} : fg(-2)$$

$$= f[g(-2)]$$

$$= f(2(-2)^2)$$

$$= 8(3x+3)^2$$

$$= 8(3x+3)(3x+3)$$

$$= 8(9x^2 + 9x + 9x + 9)$$

$$= 8(9x^2 + 18x + 9)$$

$$= 72x^2 + 144x + 72$$

KEMENTERIAN PENDIDIKAN MALAYSIA	POLITEKNIK MALAYSIA	COURSE CODE/COURSE NAME	DBM2033 DISCRETE MATHEMATICS
JABATAN MATEMATIK, SAINS DAN KOMPUTER		COURSEWORK ASSESSMENT	TUTORIAL 2
NAME	NED DEEN BARANTAU	SESSION	DECEMBER 2018
REGISTRATION NO.	OSDDT17F2018	DURATION	60 MINS
PROGRAMME/ SECTION	JTMK / DDT	TOTAL MARKS	20 MARKS

Instructions

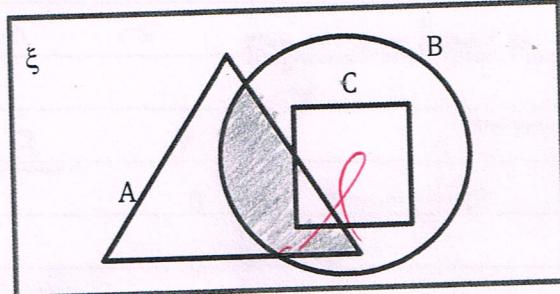
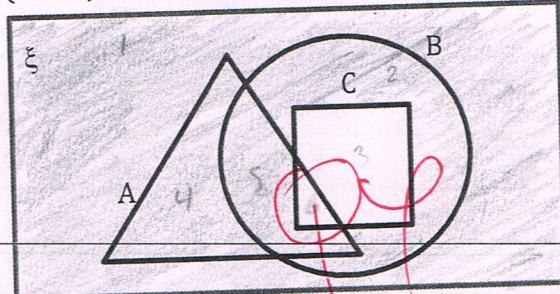
- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

[4 marks]

CLO1, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$ (b) The set $(A \cap B) \cup C'$ 

Question 2

[6 marks]

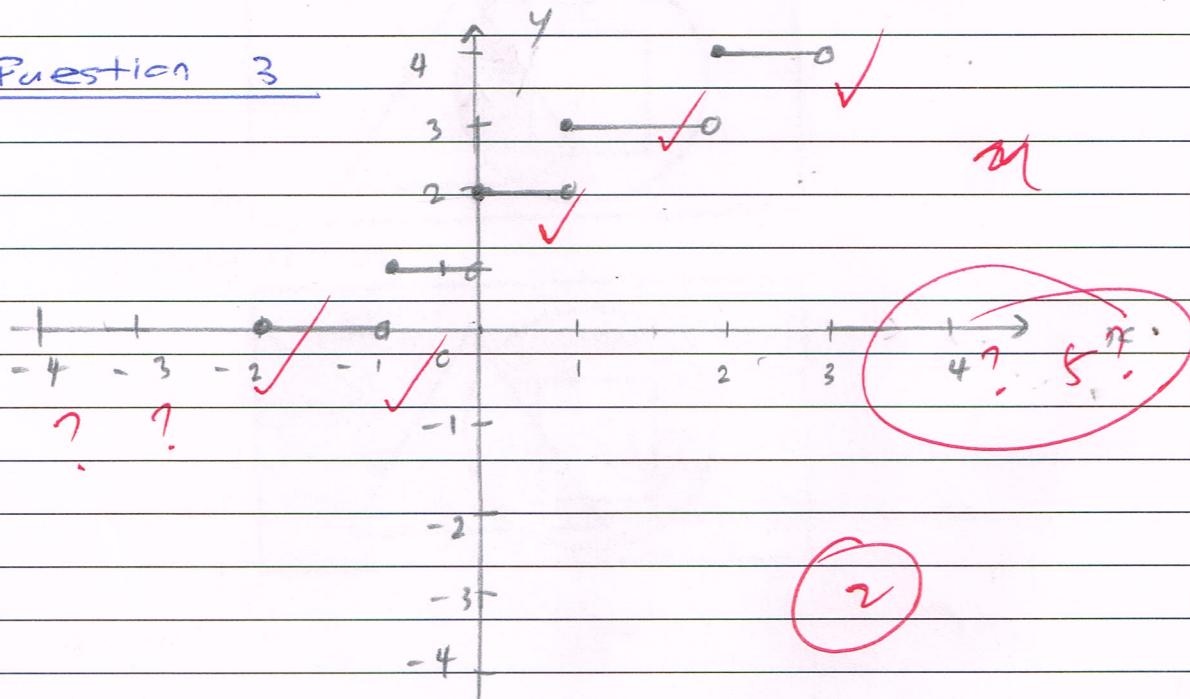
CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

ada?

Tutorial 2Question 2

1. Relation is reflexive because $(1, 1), (2, 2), (3, 3)$
 $(4, 4)$ related to itself.
2. Relation is symmetric because $(1, 2)$ and $(2, 1)$
 are related to b and b related to a.
3. Relation is transitive because $(1, 2)$ is in relation
 $(2, 1)$ is in relation, then $(1, 1)$ should be in
 relation. $(a, b), (b, c) = (a, c)$
- (x) ∵ Relation is equivalence relation, why?

Question 3

$$f(0) = |0 + 2| \\ = 2$$

$$f(1) = |1 + 2| \\ = 3$$

$$f(2) = |2 + 2| \\ = 4$$

$$f(-1) = |-1 + 2| \\ = 1$$

$$f(-2) = |-2 + 2| \\ = 0$$

Question 4

$$f(x) = -3x + 7 \quad g(x) = 2x^2 - 8$$

$$g(-2) = 2(-2)^2 - 8$$
$$= 0$$

$$fg(-2) = -3(0) + 7$$
$$= 7$$

~~* How~~



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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	DIANA TRI NUR SUDOK Mohd Jaimi bin Ja'afar
REGISTRATION NO.	050DT18F1060 / 090DT17F1022
PROGRAMME/ SECTION	DDT2A / DDT4A

COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS	
COURSEWORK ASSESSMENT	TUTORIAL 2	
SESSION	DECEMBER 2018	
	CLO1	20 MARKS
DURATION	60 MINS	CLO2 (2+) 2
		CLO3
		TOTAL MARKS 20 MARKS

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

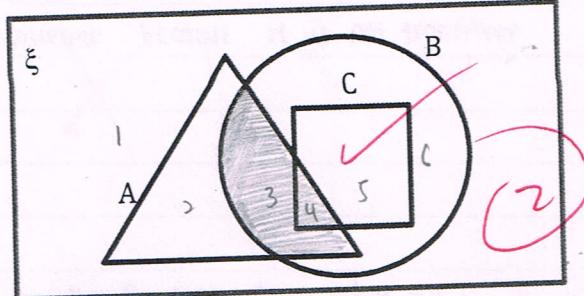
Question 1

[4 marks]

CLO1, C2

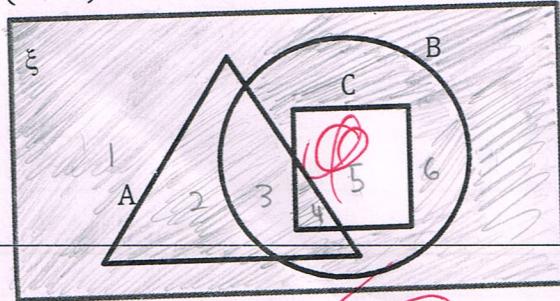
The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$



$$\begin{aligned} A &= \{2, 3, 4\} \\ B &= \{3, 4, 5, 6\} \\ A \cap B &= \{3, 4\} \end{aligned}$$

(b) The set $(A \cap B) \cup C'$



$$\begin{aligned} A &= \{2, 3, 4\} \\ B &= \{3, 4, 5, 6\} \\ C &= \{4, 5\} \\ (A \cap B) &= \{3, 4\} \\ C' &= \{1, 2, 3, 6\} \\ (A \cap B) \cup C' &= \{1, 2, 3, 4, 6\} \end{aligned}$$

Question 2

[6 marks]

CLO1, C2

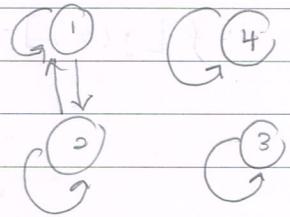
Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

Question 2

$R = \{(1,1), (1,2), (2,1), (2,2), (3,3), (4,4)\}$ on the set

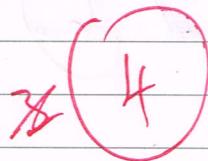
Reflexive

- R is reflexive because all the elements are related to itself.



Symmetric

- It is symmetrical because $(1,2) \in R$ and $(2,1) \in R$



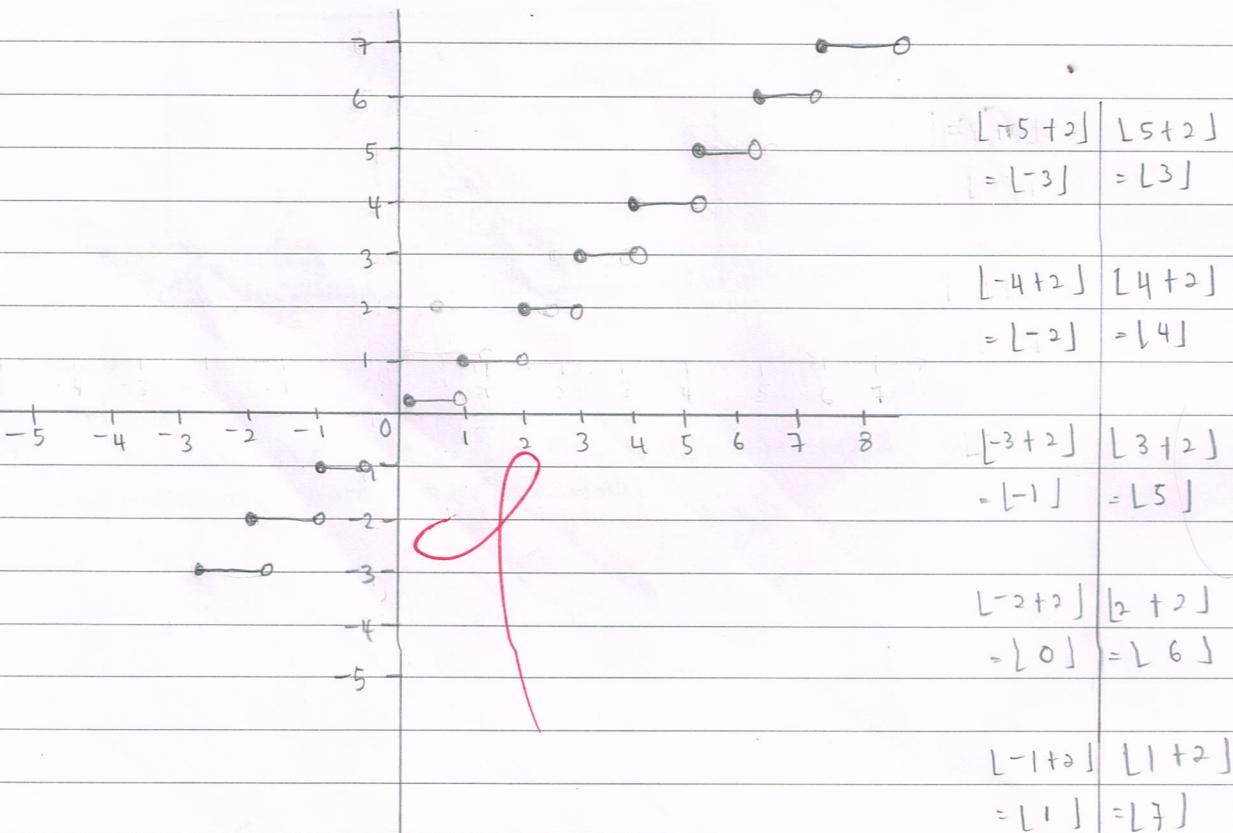
transitive

- Not transitive because $(1,2) \in R$, but $(2,3) \notin R$ and $(1,3) \notin R$

Set R is not equivalence because it is not transitive.

**Question 3**

Illustrate the graph for the function $f(x) = \lfloor x+2 \rfloor$ for the range of $-5 \leq x \leq 5$.



Question 4

Let $f(x) = -3x + 7$ and $g(x) = 2x^2 - 8$. Compute $f \circ g(-2)$

$$\begin{aligned}f[g(x)] &= f(2x^2 - 8) \\&= -3(2x^2 - 8) + 7 \\&= -6x^2 + 24 + 7 \\&= -6x^2 + 31\end{aligned}$$

$$\begin{aligned}f[g(-2)] &= -6(-2)^2 + 31 \\&= -24 + 31 \\&= 7\end{aligned}$$

(6)



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JABATAN MATEMATIK, SAINS DAN KOMPUTER

NAME	ABIGAYLE ALYAHIA	COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS
		COURSEWORK ASSESSMENT	TUTORIAL 2
		SESSION	DECEMBER 2018
DURATION	60 MINS	CLO1	20 MARKS
		CLO2	(2)
		CLO3	
		TOTAL MARKS	20 MARKS

NAME : ASMA ARIFAH BT BERAWI
0500710F1041

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

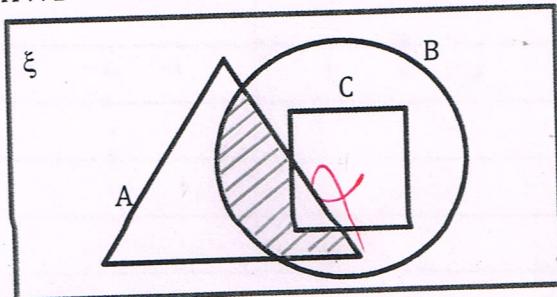
Question 1

[4 marks]

CLO1, C2

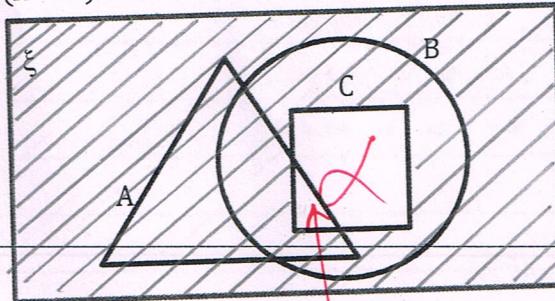
The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

- (a) The set $A \cap B$



- (b) The set $(A \cap B) \cup C'$

A 2, 3.
B 3, 4
(3)



Question 2

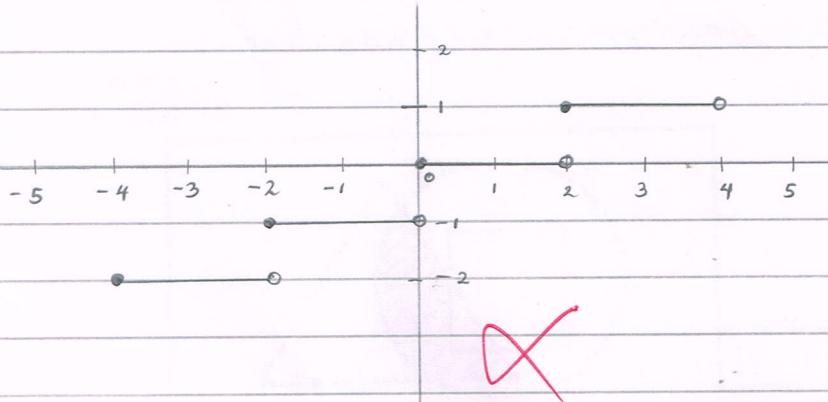
[6 marks]

CLO1, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

Question 2.

The relation is equivalence relations because it is reflexive, symmetric and transitive,
 It is reflexive since all elements loop to itself.
 It is symmetric since $(1, 2) \in R$ and $(2, 1) \in R$
 It is transitive since $(1, 2) \in R, (2, 1) \in R$ and $(1, 1) \in R$

Question 3.

when x is 0 , then $\lfloor 0+2 \rfloor = 2$

when x is 2 , then $\lfloor 2+2 \rfloor = 4$

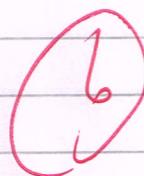
when x is -2 , then $\lfloor -2+2 \rfloor = 0$

when x is -4 , then $\lfloor -4+2 \rfloor = -2$

Question 4

$$\begin{aligned}
 f[g(x)] &= f(2x^2 - 8) \\
 &= -3(2x^2 - 8) + 7 \\
 &= -6x^2 + 24 + 7 \\
 &= -6x^2 + 31
 \end{aligned}$$

$$\begin{aligned}
 f[g(-2)] &= -6(-2)^2 + 31 \\
 &= -24 + 31 \\
 &= 7
 \end{aligned}$$





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JABATAN MATEMATIK, SAINS DAN KOMPUTER

MILLENNIA ANAK CAWANG

NAME	FRANCISCCA ANAK UBIN
REGISTRATION NO.	05D0T18F1020
PROGRAMME/ SECTION	DOT2A

COURSE CODE/ COURSE NAME	DBM2033 DISCRETE MATHEMATICS	
COURSEWORK ASSESSMENT	TUTORIAL 2	
SESSION	DECEMBER 2018	
DURATION	60 MINS	20 MARKS
		20 MARKS

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

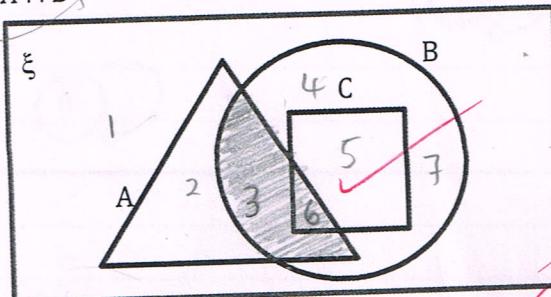
Question 1

[4 marks]

CL01, C2

The Venn diagrams show the sets A, B and C such that the universal set, $\xi = A \cup B \cup C$. On the diagram, shade

(a) The set $A \cap B$



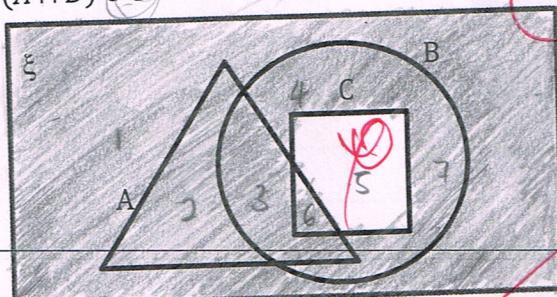
$$\xi = \{1, 2, 3, 4, 5, 6, 7\}$$

$$A = \{1, 2\}$$

$$B = \{4, 5, 6\}$$

$$C = \{5, 6\}$$

(b) The set $(A \cap B) \cup C'$



$$\xi = \{1, 2, 3, 4, 5, 6, 7\}$$

$$A = \{1, 2\}$$

$$B = \{4, 5, 6\}$$

$$C = \{5, 6\}$$

$$(A \cap B) = \{3\}$$

$$C' = \{1, 2, 3, 4, 7\}$$

Question 2

[6 marks]

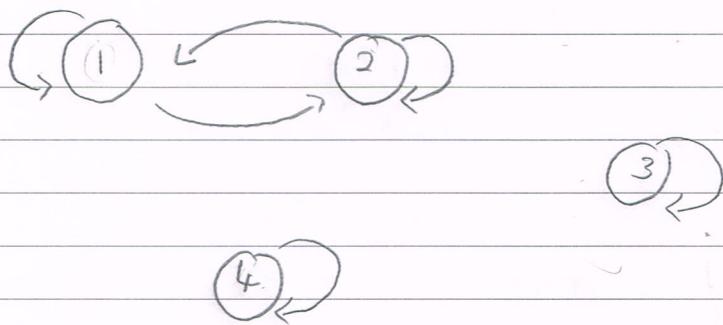
CL01, C2

Given the relations $\{(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (4, 4)\}$ on the set $\{1, 2, 3, 4\}$. Identify whether the relations given are equivalence relations?

QUESTION 2

$$R = \{ (1,1), (1,2), (2,1), (2,2), (3,3), (4,4) \}$$

$$S = \{ 1, 2, 3, 4 \}$$



Reflexive

R is reflexive since all the elements in the set related to itself.

(A)

Symmetric

R is symmetric since if $1 R 2$ then $2 R 1$ in R.

Transitive

R is not transitive since $(1,2) \in R$ but $(1,3)$ and $(2,3) \notin R$.

R is not an equivalent relation because R is reflexive and symmetric but not transitive.

Question 3

Illustrate the graph for the function $f(x) = \lfloor x+2 \rfloor$ for the range of $-5 \leq x \leq 5$.

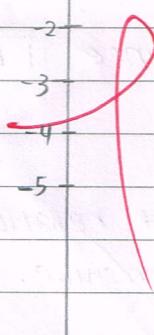
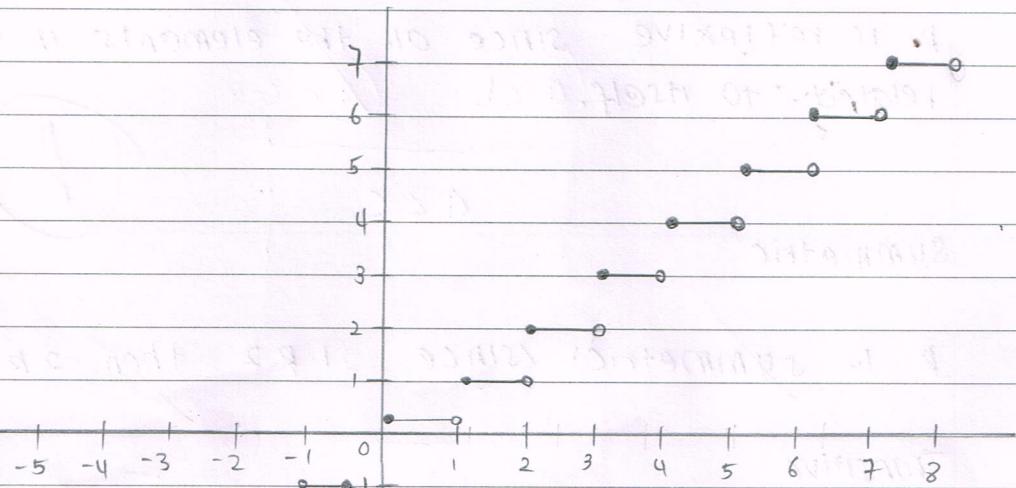
$$\begin{aligned} & \lfloor -5+2 \rfloor \quad \lfloor 5+2 \rfloor \\ &= \lfloor -3 \rfloor \quad = \lfloor 3 \rfloor \end{aligned}$$

$$\begin{aligned} & \lfloor -4+2 \rfloor \quad \lfloor 4+2 \rfloor \\ &= \lfloor -2 \rfloor \quad = \lfloor 4 \rfloor \end{aligned}$$

$$\begin{aligned} & \lfloor -3+2 \rfloor \quad \lfloor 3+2 \rfloor \\ &= \lfloor -1 \rfloor \quad = \lfloor 5 \rfloor \end{aligned}$$

$$\begin{aligned} & \lfloor -2+2 \rfloor \quad \lfloor 2+2 \rfloor \\ &= \lfloor 0 \rfloor \quad = \lfloor 6 \rfloor \end{aligned}$$

$$\begin{aligned} & \lfloor -1+2 \rfloor \quad \lfloor 1+2 \rfloor \\ &= \lfloor 1 \rfloor \quad = \lfloor 7 \rfloor \end{aligned}$$



Question 4

Let $f(x) = -3x + 7$ and $g(x) = 2x^2 - 8$. (compute $fg(-2)$)

$$f[g(x)] = f(2x^2 - 8)$$

$$= -3(2x^2 - 8) + 7$$

$$= -6x^2 + 24 + 7$$

$$= -6x^2 + 31$$

$$f[g(-2)] = -6(-2)^2 + 31$$

$$= -24 + 31$$

$$= 7$$

6